

AMENDMENTS TO THE SPECIFICATION:

Please revise Paragraphs [0004], [0020] through [0022], [0024], and [0026] through [0030] as shown.

[0004] The present invention provides a stroking ball-type constant velocity joint including an inner joint member defining longitudinal grooves in combination with substantially helical grooves. The grooves are formed in an outer surface of the inner joint member. The grooves cooperate with corresponding grooves formed in an inner surface of an outer joint member. The longitudinal or straight grooves are disposed along the outer surface of the inner joint member in alternating relation with respect to the helical grooves. For example, a straight groove is positioned between two helical or inclined grooves. Furthermore, adjacent helical grooves are inclined or offset in opposite directions. For example, a first helical groove extends in a left-hand twist direction while a second, adjacent helical groove extends in a right-hand twist direction.

[0020] The helical grooves 16a, 16c, 16e, 16g extend between the first and second ends 24, 26 offset or inclined at an angle 42 with respect to the axis 40. The inner joint member 12 includes helical grooves 16a, 16c, 16e, 16g, each one extending in an opposite rotational directions direction relative to the circumferentially adjacent one-another. For example, as shown in Figures 2 and 3, the helical groove 16a extends from the second end 26 to the first end 24 at an angle 42 offset with respect to the axis 40. A first end 44 of the groove 16a is spaced further from the groove 16b than a second end 46 of the groove 16a. One of ordinary skill in the art would characterize For convenience, the groove 16a can be characterized as a right hand groove in inner joint member 12 as having a left-hand twist or being a left-hand groove. The groove 16e is located diametrically opposite the groove

16a on inner joint member 12 and also has a left-hand twist. The groove 16e extends between the first and second ends 24, 26, in mirrored relation to curving in the same rotational direction as the groove 16a does, and, for convenience, can also be referred to as a right hand groove.

[0021] Each of the The groove grooves 16c and 16g can extend extends between the first and second ends 24, 26 at an angle 42 relative to the axis 40, but in an —The groove 16c extends in opposite rotational direction relative relation to the groove grooves 16a and 16e. As shown in Fig. 2, as the first end 44a of the groove 16c is spaced further from the groove 16b than the second end 46a of the groove 16c. One of ordinary skill in the art would characterize the grooves 16c and 16g in inner joint member 12 as having a right-hand twist or being right-hand grooves. For convenience, the groove 16c can be referred to as a left-hand groove. The groove 16g extends in mirrored relation to the groove 16c and, for convenience, can also be referred to as a left-hand groove.

[0022] As shown in Figures 1-3, each one of the helical grooves 16a, 16c, 16e, 16g extend extends along the outer surface 14 between two of the longitudinal grooves 16, 16b, 16d, 16f. For example, the helical groove 16a extends between the longitudinal grooves 16 and 16b. In addition, the grooves 16-16g can be disposed about the outer surface 14 in alternating relation, such that each . Each of the helical grooves 16a, 16c, 16e, 16g can extend is located between two other helical grooves that extend extending in an opposite relation direction. For example, the right hand left-hand helical groove 16a extends is located between the left hand right-hand grooves 16c and 16g. Thus, as shown in Fig. 1, the circumferential sequence of grooves 16-16g is as follows (proceeding clockwise): longitudinal groove 16; left-hand groove 16a; longitudinal groove 16b; right-

hand groove 16c; longitudinal groove 16d; left-hand groove 16e; longitudinal groove 16f; and right-hand groove 16g.

[0024] The joint 10 also includes a cage 20 surrounding the inner joint member 12. The cage 20 defines a plurality of windows 22, 22a, 22b, 22c, 22d, 22e, 22f, 22g. Each of the windows 22-22g is disposed adjacent to a corresponding groove 16-16g. Each of the plurality of balls 18-18g pièce is disposed in a respective window 22-22g and balls 18-18g are retained in the grooves 16-16g by the cage 20. The windows 22-22g include a plurality of short windows 22, 22b, 22d, 22f and a plurality of long windows 22a, 22c, 22e, 22g. The short windows are positioned adjacent the longitudinal grooves 16, 16b, 16d, 16f. The long windows 22a, 22c, 22e, 22g are positioned adjacent the helical grooves 16a, 16c, 16e, 16g. As shown in Figure 10, a long window such as long window 22c is circumferentially wider than a short window such as short window 22b. The axial width of the short and long windows 22-22g are the same.

[0026] The inwardly facing grooves 36-36g include longitudinal grooves 36, 36b, 36d, 36f and helical grooves 36a, 36c, 36e, 36g. The longitudinal grooves 36, 36b, 36d, 36f extend substantially parallel to an a longitudinal axis 40a of the outer joint member 28, between the third and fourth ends 30, 32, the longitudinal axis 40a being centered with respect to the outer joint member 28 as shown by Figs. 4-6. The outer joint member 28 includes four substantially longitudinal grooves 36, 36b, 36d, 36f disposed along the inner surface 34 ninety degrees (90°) from one another.

[0027] The helical grooves 36a, 36c, 36e, 36g extend between the third and fourth ends 30, 32 offset or inclined at an angle 42a with respect to the axis 40a. The outer joint

member 28 includes helical grooves 36a, 36c, 36e, 36g, each one extending in an opposite rotational directions direction relative to the circumferentially adjacent one-another. For example, as shown in Figures 5 and 6, the helical groove 36e extends from the third end 30 to the fourth end 32 at an angle 42a offset with respect to the axis 40a. A second end 46b of the groove 36e is spaced further from the groove 36f than a first end 44b of the groove 36e. One of ordinary skill in the art would characterize For convenience, the groove 36e ~~can be characterized as a right hand groove in outer joint member 28 as having a right-hand twist or being a right-hand groove~~. The groove 36a ~~is located diametrically opposite the groove 36e on outer joint member 28 and also has a right-hand twist. The groove 36e~~ extends between the third and fourth ends 30, 32, ~~in mirrored relation to curving in the same rotational direction as the groove 36e does and, for convenience, can also be referred to as a right hand groove.~~

[0028] ~~Each of the grooves 36c and The groove 36g can extend~~ extends between the third and fourth ends 30, 32 at an angle 42a relative to the axis 40a, but in an ~~—The groove 36g extends in opposite rotational relation~~ direction relative to the ~~groove grooves~~ 36a and 36e. As shown in Fig. 5, as the first end 44c of the groove 36g is spaced closer to the groove 36f than the second end 46c of the groove 36g. One of ordinary skill in the art would characterize the grooves 36c and 36g in outer joint member 28 as having a left-hand twist or being left-hand grooves. For convenience, the groove 36g can be referred to as a left hand groove. The groove 36c extends in mirrored relation to the groove 36g and, for convenience, can also be referred to as a left hand groove.

[0029] As shown in Figures 4-6, each one of the helical grooves 36a, 36c, 36e, 36g ~~extend~~ extends along the inner surface 34 between two of the longitudinal grooves 36,

36b, 36d, 36f. For example, the helical groove 36a extends between the longitudinal grooves 36 and 36b. In addition, the grooves 36-36g can be disposed about the inner surface 34 in alternating relation, such that each. Each of the helical grooves 36a, 36c, 36e, 36g extends is located between two other helical grooves that extend extending in an opposite relationdirection. For example, the right-hand helical groove 36a is located extends between the left-hand grooves 36c and 36g. Thus, as shown in Fig. 4, the circumferential sequence of grooves 36-36g is as follows (proceeding clockwise): longitudinal groove 36; right-hand groove 36a; longitudinal groove 36b; left-hand groove 36c; longitudinal groove 36d; right-hand groove 36e; longitudinal groove 36f; and left-hand groove 36g.

[0030] The helical grooves 16a, 16c, 16e, 16g of the inner joint member 12 individually cooperate with the helical grooves 36a, 36c, 36e, 36g, respectively, of the outer joint member 28 to form cross groove passages 38a, 38c, 38e, 38g. Cross groove passages are discussed in greater detail in U.S. Patent No. 6,468,164, which is hereby incorporated by reference. For example, the left-hand groove 16a of inner joint member 12 is inclined with respect to the axis 40 of the inner joint member 12 to the same degree that the right-hand groove 36a of outer joint member 28 is inclined to the axis 40a of the outer joint member 28. However, the grooves 16a and 38a extend in opposing opposite left and right-hand twist directions such that they cross one another, as can be readily understood with reference to Fig. 7.